04/21/14 Agenda

- Chapter 9 - Quadratic Functions & Equations
    - Day 1 - Graphing from a Table

Homework
    - Worksheet 1 - Graph using a Table

Quadratics - Day 1 - Graphing from a Table

April 21, 2014

Goal: Graph quadratic functions in the form: $y = ax^2$

Complete the following tables by choosing x values, and then using the equation to find the y values. Then use the table to graph the coordinate points to graph the equation.

$$y = \frac{1}{2}x + 2$$

x	y
-4	0
-2	1
0	+2
2	+3
4	+4
6	5

$y = \frac{1}{2}(-4) + 2 = 0$ (-4, 0)

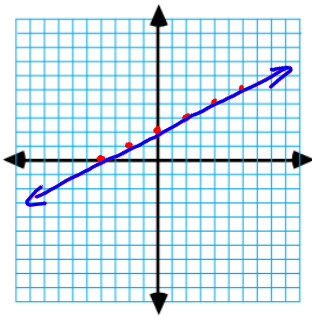
$y = \frac{1}{2}(-2) + 2 = 1$ (-2, 1)

(0, +2)

(2, 3)

(4, 4)

(6, 5)



What type of function is this? LINEAR

How do you know? IT'S A LINE

Your page says y = 2^x - 3, please change it to

$$y = 2x - 3$$

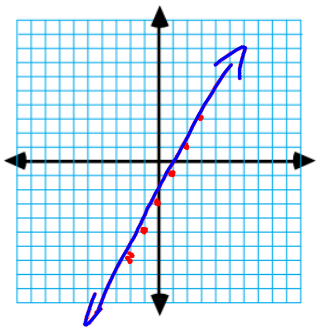
x	y
-2	-7
-1	-5
0	-3
1	-1
2	1
3	3

(-2, -7)

(-1, -5)

(0, -3)

(1, -1)



What type of function is this? _____

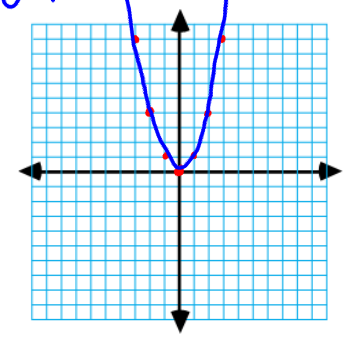
How do you know? _____

Let's try:

$y = x^2$ ← $x^2 = x \cdot x$ DEGREE OF 2 QUADRATIC EQUATION

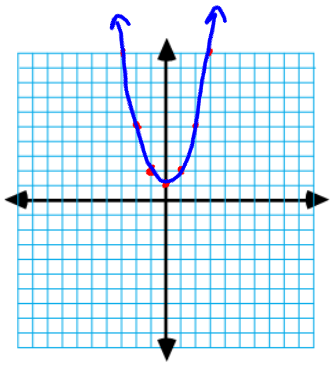
x	y	
-2	4	(-2,4)
-1	1	(-1,1)
0	0	(0,0)
1	1	(1,1)
2	4	(2,4)
3	9	(3,9)

$(-2)^2 = (-2)\cdot(-2) = 4$
$(-1)^2 = (-1)(-1) = 1$
$(0)^2 = 0 \cdot 0 = 0$
$(1)^2 = 1 \cdot 1 = 1$
$2^2 = 2 \cdot 2 = 4$
$3^2 = 3 \cdot 3 = 9$



$y = x^2 + 1$

x	y
-2	5
-1	2
0	1
1	2
2	5
3	10



What type of function are these? QUADRATIC

How do you know? DEGREE OF 2

Equation: ax^2+bx+c Shape: U

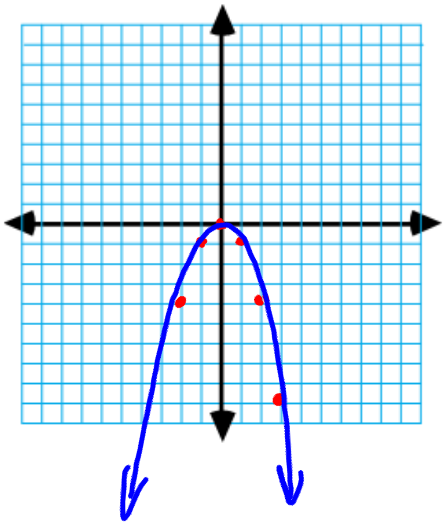
These are called PARABOLAS

$y = -x^2$

x	y
-2	-4
-1	-1
0	0
1	-1
2	-4
3	-9

$y = -(-2)^2$

$y = -(-1)^2$



$y = 2x^2 - 3$

x	y
-2	5
-1	-1
0	-3
1	-1
2	5
3	15